

Notice of Allowability

Application No.

10/618,114

Examiner

PHAN T.H. PALMER

Applicant(s)

TAKAHASHI ET AL.

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/03/2003.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 10 July 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Phan T.H. Palmer
PHAN T. H. PALMER
PRIMARY EXAMINER

01/25/2005

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: the claims are allowable over prior art of record, because none of the references in alone or in combination discloses:

+++ A ring resonator comprising:

- a ring waveguide of a first relative refractive index difference, the ring waveguide having a narrow part; and

- an optical waveguide of a second relative refractive index difference smaller than the first relative refractive index difference, the optical waveguide disposed adjacent to the narrow part to optically couple with the narrow part, as discloses in claims 1 and 4.

+++ A ring resonator comprising:

- a ring waveguide formed from first materials having a first relative refractive index difference between the first materials, a first portion of the ring waveguide having a first waveguide width and a second portion of the ring waveguide having a second waveguide width, the second waveguide width being less than the first waveguide width; and

- an optical waveguide formed from second materials having a second relative refractive index difference between the second materials, the second relative refractive index difference being smaller than the first relative refractive index difference, wherein the optical waveguide is disposed adjacent to the

second portion of the ring waveguide to optically couple with the second portion,
as discloses in claims 11, and 17.

The underline limitations are critically, since the ring resonator is improved. It improves the efficiency of the directional coupling between the ring waveguide and the input/output of optical waveguide.

The Ho et al. (5,926,496), the Lenz et al. (6,259,847 B1), the Little et al. (6,411,752 B1), and Lim et al. (6,751,368 B2) references, all these references disclose the ring waveguide coupling with the optical waveguide, but none of these references discloses the ring waveguide having a narrow part or a first portion of the ring waveguide having a first waveguide width and a second portion of the ring waveguide having a second waveguide width, the second waveguide width being less than the first waveguide width.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CONTACT INFORMATION

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHAN T.H. PALMER whose telephone number is (571) 272-2354. The examiner can normally be reached on 4/4 OFF MONDAY.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RODNEY B. BOVERNICK can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PTHP
01/25/2005

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